

Review: Intel's Haswell chip strong on PC gaming

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The Digital Storm "Virtue" desktop gaming computer is displayed on Nov. 18, 2013, in Decatur, Ga. It boasts an advanced liquid cooling system and the latest Haswell microprocessor from Intel, Corp. (AP Photo/ Ron Harris)

PC gaming has been a withering entity lately. Consoles rule, and game makers primarily target Sony's PlayStation and Microsoft's Xbox as the game systems of choice. That hasn't stopped PC gaming specialists from trying their best, though.

Despite the dwindling number of quality PC game titles, the machines themselves are getting stronger.

Intel's latest processing chips, known as Haswell, easily handle the rigors of the most demanding PC games. These may be the waning days of PC gaming, but as far as technical heft, they could very well be the best.

Here's a look at a new gaming laptop and a desktop tower, both running Windows 8. They come from MSI and Digital Storm, two strong builders of high-quality gaming PCs:

— MSI GT70 laptop (\$2,799 for configuration with 3.4 gigahertz processor, 32 gigabytes of RAM):

Calling MSI's GT70 a laptop is technically true, but it's a beast compare with the thin and light breed of laptops that dominate these days. But those trim and slim PCs aren't optimized for gaming.

This unit is large and in charge: The configuration I tested weighs 8.6 pounds and boasts a 17.3-inch screen, measured diagonally, with a resolution of 1,920 pixels by 1,080 pixels for high-definition graphics. It has plenty of ports for accessories.

The gaming gravitas, of course, is under the hood in the form of an Intel Core i7 3.4 gigahertz quad-core processor. Coupled with 32 gigabytes of internal memory, the maximum this processor can use, the GT70 handles a demanding blend of titles without a hitch or hang-up. There's a generous 1 terabytes of hard drive space to store your games and 128 (AP1) gigabytes of solid-state storage for faster access to data.

"Wolfenstein," a first-person shooter involving Nazis and supernatural

powers, recommends systems with at least at a 2.4 gigahertz processor and 2 gigabytes of memory. The GT70 essentially stomps all over these recommendations. That's the case with all the other titles I tested, including "Far Cry 3," "Crysis Warhead," and "Risen." The GT70 laughs at recommended specs.

I couldn't make this laptop wilt even after toggling the screen resolution, shadows and graphics options to the highest settings. There was no buffering, lagging or glitches.

Everything runs smoothly because the internal technology has outpaced what game developers are throwing onto the shelves. I easily achieved more than 60 frames per second during play on both "Wolfenstein" and "Crysis Warhead." Anything less than that may look OK, but it isn't even keeping up with the refresh rate on most modern monitors.

Third-party system tweaks can get you even higher frame rates. Of course, frames per second isn't the only benchmark, even if it's among the most important.

The GT70 also allows me to personalize the keyboard backlighting into zones of any colors I desired. And I could have those colors glow steadily or breathe in an out from bright to dark, a really nice touch. It's mostly a cosmetic touch, but backlit keyboards can help when playing in low-light conditions.

If I were to ding the GT70 for anything, it would be its size and heft. It's a lot of laptop, but it is really meant to be a portable high-powered gaming PC, without having to lug an actual PC. So it's hard to criticize MSI for delivering power to that genre of consumers who require it most, the gamers.

The GT70 model I tried was built well beyond the base model, which

starts at \$1,599, but runs on Windows 7 and not Windows 8 and has only half as much RAM. But the base model specs are strong as well.

— Digital Storm Virtue desktop PC (\$2,174 for configuration with 3.5 gigahertz processor, 16 gigabytes of RAM, 120 GB solid-state drive):

If you a purist gamer, you're likely in the market for a liquid-cooled PC running a quad-core Intel chip with enough fans to dissipate the heat of your overclocked microprocessor. Overclocking lets your processor perform faster than the manufacturer's specifications, but it also generates more heat.

The Virtue is a black obelisk of a gaming tower power. The build I tried had an Intel Core i7 3.5 gigahertz processor that is unlocked, meaning I could overclock it to up to 4.2 gigahertz to target higher performance if I chose to. I didn't need to, though.

My model came with 16 gigabytes of internal memory. This build also comes with a Corsair liquid-cooling system with a radiator that is easily more advanced than the ones in my cars. That's good, because one thing remains constant about PC gaming: Things get hot.

There's a bit of noise from the chassis with five large fans at work, but I played primarily wearing gaming-grade headphones and didn't notice the fan noise during the heat of battle. If you want to keep your gaming tower cool, some noise will be a part of that if you go with speakers over headphones.

Running the maximum shadow and detail settings while playing "Crysis" in full-screen mode, I still breezed up to 95 frames per second during full melee action. This is solid considering the detailed graphics that

must be rendered during play to keep the surroundings realistic.

I got a lower frame rate while playing "Far Cry 3" on the VIRTUE, but it's a newer game with higher system recommendations. I was still able to achieve 80 to 85 frames per second at the maximum graphics settings during frenetic battle sequences. There are tweaks and modifications I could use to gain even higher frame rates. My experience at up to 90 frames per second was pretty smooth.

The base price for the Digital Storm Virtue is \$1,509, but most gamers tend to choose specific component upgrades when ordering a PC build to add RAM, extra hard disk space, Blu-Ray drives and other niceties. The base specs are no slouch, but I'd recommend more RAM if you're thinking about serious online and offline game play.

Certainly, few people will run out and plunk down more than \$2,000 for a gaming-grade computer simply because Microsoft's newest Xbox One won't run "Call of Duty: Ghosts" at full 1080p high-definition, as the game's developers now admit. There is only a subset of consumers hungry for such machinery.

But for gaming purists, there's a lot to like in the age of the quad-core Haswell chip.

More information: Intel: software.intel.com/en-us/haswell

Digital Storm: www.digitalstormonline.com/

MSI: us.msi.com/

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